CLAIMS

1. Composition intended for the implementation of a cytotoxic treatment in mammals, comprising:

(i) a nucleic acid sequence encoding all or part of an MIP chemokine,

(ii) at least one nucleic acid sequence encoding all or part of a polypeptide having at least cytotoxic activity,

said nucleic acid sequences being placed under the control of the elements required for their expression in a host cell of said mammal.

2. Composition according to Claim 1, ~~characterized in that~~ wherein said MIP chemokine is the MIP1 chemokine, ~~and more particularly selected from the group consisting of the MIP1α and MIP1β chemokines.~~

3. Composition according to either of Claims 1 and 2, characterized in that said polypeptide having cytotoxic activity is chosen from cytokines, proteins encoded by suicide genes and anti-angiogenic protein factors.

4. Composition according to Claim 3, characterized in that said polypeptide having cytotoxic activity is a cytokine chosen from interferons α, β and γ, interleukins, tumor necrosis factors and colony stimulating factors.

5. Composition according to Claim 4, ~~characterized in that~~ wherein said polypeptide having cytotoxic activity is interleukin-2 (IL-2).

6. Composition according to Claim 4, ~~characterized in that~~ wherein said polypeptide having cytotoxic activity is interferon gamma (IFN-γ).

7. Composition according to ~~one of Claims 1 to 6, characterized in that it comprises~~ claim 1 comprising in (ii) at least two nucleic acid sequences encoding all or part of interleukin-2 (IL-2) and all or part of interferon gamma (IFN-γ).

8. Composition according to Claim 4, ~~characterized in that~~ wherein said polypeptide has at least a cytotoxic

activity selected from the group consisting of thymidine kinase activity, purine nucleoside phosphorylase activity, guanine phosphoribosyl transferase activity and cytosine deaminase activity.

9. Composition according to Claim 8, wherein ~~characterized in that~~ said polypeptide has at least CDase activity and UPRTase activity.

10. Composition according to Claim 4, characterized in that said polypeptide having cytotoxic activity is an anti-angiogenic protein factor chosen from angiostatin, endostatin, platelet factor PF4, thrombospondin-1, PRP, VEGI, metalloproteases and urokinase.

11. Composition according to Claim 1, wherein ~~characterized in that~~ said nucleic acid sequences (i) and (ii) are inserted into a recombinant vector of plasmid or viral origin.

12. Composition according to Claim 11, wherein ~~characterized in that~~ said nucleic acid sequences (i) and (ii) are inserted into the same recombinant vector.

13. Composition according to Claim 11, wherein ~~characterized in that~~ said nucleic acid sequences (i) and (ii) are inserted into distinct recombinant vectors.

14. Vector comprising:

(i) a nucleic acid sequence encoding all or part of an MIP chemokine,

(ii) at least one nucleic acid sequence encoding all or part of a polypeptide having at least cytotoxic activity,

said nucleic acid sequences being placed under the control of the elements required for their expression in a host cell.

15. Vector according to Claim 14, wherein said vector ~~characterized in that~~ it is a viral vector.

16. Viral particle comprising a vector according to Claim 15.

17. Method for preparing a viral particle according to Claim 16, according to which:

(i) a viral vector according to claim 15 is introduced into a cell capable of producing said vector, so as to obtain a transfected cell,

(ii) said transfected cell is cultured under suitable conditions in order to allow the production of said viral particle, and

(iii) said viral particle is recovered from the cell culture.

18. Composition intended for the implementation of a cytotoxic treatment in mammals, comprising:

(i) all or part of an MIP polypeptide,

(ii) all or part of a polypeptide having at least cytotoxic activity,

according to which said polypeptides (i) and (ii) are as defined in ~~Claims 1 to 10~~ Claim 1.

19. Formulation intended for the implementation of a cytotoxic treatment in mammals, ~~characterized in that it comprises~~ comprising a composition according to ~~one of Claims 1 to 13, a vector according to Claims 14 or 15, a viral particle according to Claim 16 or a composition according to according to~~ Claim 18, and a support which is ~~acceptable from a pharmaceutical point of view~~ pharmaceutically accepted.

20. Formulation according to Claim 19, ~~characterized in that it comprises amounts which are acceptable from a pharmaceutical point of view of a prodrug~~ comprising capable of being transformed into a cytotoxic molecule by a polypeptide having at least cytotoxic activity.

21. Formulation according to Claim 20, ~~characterized in that~~ wherein said prodrug is ~~selected from~~ 5-fluorouracil (5-FU) ~~and~~ or 5-fluorocytosine (5-FC).

22. Use of a composition according to Claims 1 to 13, of a vector according to Claims 14 to 15, of a viral particle according to Claim 16 or of a composition according to according to Claim 18, for preparing a cytotoxic medicinal product.